

Quiz #6
(50 Points)

Please read each question carefully. Show all your calculations in order to receive full credit on the problems. Please manage your time wisely.

- (5) 1. We generally think of prices as indicators of value that we pay for goods and services. A discount rate is often referred to as a price. What is the nature of the discount rate as a price? How does it represent value for a good or service?
- (5) 2. Which project evaluation criteria yields the dynamically efficient investment and why is this result socially optimal?

- (15) 3. Suppose you are faced with the following stream of costs and benefits for a small watershed improvement project.

<u>Year</u>	<u>Costs</u>	<u>Benefits</u>
0	\$15,000	\$ 0
1	20,000	0
2	10,000	5,000
3	1,000	15,000
4	1,000	22,000
5	1,000	26,000

- a. If your agency's discount rate is 7%, should your agency invest in this project? (Use the Benefit-Cost criterion in your analysis and show all your work to receive full credit)
- b. If your agency's discount rate was 15%, how do you think your answer in (a) would change? Why? (Do not recalculate your answer)

(15) 4. You work for the Bureau of Land Management. Your agency is evaluating a number of land restoration projects in Utah. One of the projects has the following profile of costs and benefits over a ten-year planning horizon. Your supervisor has asked you to calculate the NPV of this project using the agency's recommended discount rate of 6%. Is this project an economically viable project? Why? (Number are in millions of dollars)

<u>Year</u>	<u>Benefits</u>	<u>Costs</u>
1	\$ 0	\$ 10
2	0	10
3	0	10
4	5	5
5	7	3
6	9	2
7	10	2
8	12	1
9	12	1
10	12	1

- (10) 5. Discuss how a sensitivity table can be used in B/C analysis to evaluate the role of uncertainty in project analysis. Create an example of a sensitivity table to support your answer.